



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/582,489	06/12/2006	Isao Kitazawa	062800-0118	2136
22428 7590 01/08/2008 FOLEY AND LARDNER LLP SUITE 500 3000 K STREET NW WASHINGTON, DC 20007			EXAMINER KAYES, SEAN PHILLIP	
			ART UNIT 2833	PAPER NUMBER
			MAIL DATE 01/08/2008	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/582,489

Applicant(s)

KITAZAWA ET AL.

Examiner

Sean Kayes

Art Unit

2833

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 June 2006, initial filling.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3 and 5-17 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3 and 5-17 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 June 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 6/12/06.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____.

DETAILED ACTION

Specification

1. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

Claim Objections

2. Claim 12 is objected to for being indefinite. Claim 12 recites the limitation "the load compensation". There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1-3 and 6-17 are rejected under 35 U.S.C. 102(b) as being anticipated by Nakajima (US 4404510.)
5. With respect to claim 1 Nakajima discloses an analog electronic timepiece comprising:
 - a driving signal supplying unit (8 figure 2) configured to generate and supply a reference signal for clocking;

Art Unit: 2833

- an amplifying unit (24 figure 3) configured to amplify a counter electromotive force generated by a step motor that drives hand motions of time hands;
- an impact detecting unit (13 and 14 figure 2) configured to detect an impact applied externally based on an output signal level of the amplifying unit; and
- a controlling unit (10, 11, and 14 figure 2) configured to control to drive the step motor using an intermittent driving pulse based on the reference signal supplied from the driving signal supplying unit when the time hands are in a hand-driven state, and to control to brake the step motor when an impact is detected by the impact detecting unit while the time hands are in a non-hand-driven state, wherein
- the amplification ratio of the amplifying unit is set to a value that corresponds to at least one of a weight and a moment of inertia of the time hands (24 figure 3 provides the driving signal for the timepiece. The nature of the signal being a "driving signal" entails that the amplification ratio of the signal is proportional to the hand that it drives.)

6. With respect to claim 2 Nakajima discloses the analog electronic timepiece according to claim 1, wherein the amplifying unit is a chopper-amplifying unit (24 figure 3) configured to amplify at the amplification ratio based on a predetermined pulse period (21 and 22 figure 3), and the predetermined pulse period is set to a value that corresponds to at least one of the weight and the moment of inertia of the time hand (24

figure 3 provides the driving signal for the timepiece. The nature of the signal being a "driving signal" entails that the signal is proportional to the hand that it drives.)

7. With respect to claim 3 Nakajima discloses the analog electronic timepiece according to claim 2, wherein the predetermined pulse period of the chopper-amplifying means (24 figure 3) is set further to a value that corresponds to the power source voltage ("Vdd" figure 3.)

8. With respect to claim 6 Nakajima discloses the analog electronic timepiece according to claim 1, wherein the controlling unit includes a lock pulse output unit configured to control the step motor when the impact is detected (column 3 lines 1-18), and the lock pulse output unit outputs a lock pulse for a term (t1 and t2 figure 4) corresponding to a power source voltage ("VDD" and 24 figure 3) supplied to the step motor.

9. With respect to claim 7 Nakajima discloses the analog electronic timepiece according to claim 5, wherein the lock pulse output unit is configured to output a continuous pulse having a same phase as that of the driving pulse generated when an impact is applied (column 3 lines 45-60; column 7 lines 25-41, particularly lines 36-38; and column 8 lines 4-6.)

10. With respect to claim 8 Nakajima discloses the analog electronic timepiece according to claim 6, wherein the lock pulse output by the lock pulse output unit includes at least a lock term (t1 and t2 figure 4) for outputting the continuous pulse and a stable section for outputting an inversed pulse after the lock terms has passed (column 5 lines 41-56.)

11. With respect to claim 9 Nakajima discloses the analog electronic timepiece according to claim 1, wherein the controlling unit (7 figure 2) includes a load compensating unit configured to detect rotation of a rotor based on detection of a counter electromotive force from the pulse motor soon after the output of the driving pulse (column 3 lines 1-18.)

12. With respect to claim 10 Nakajima discloses the analog electronic timepiece according to claim 1, wherein the controlling unit is configured to provide stable terms (t1 and t2 figure 4) respectively for starting the rotor of the pulse motor from a stationary stable point thereof before outputting the driving pulse, and for returning the rotor of the pulse motor to the stationary stable point thereof after outputting the driving pulse.

13. With respect to claim 11 Nakajima discloses the analog electronic timepiece according to claim 1, wherein the impact detecting unit (26 figure 3) is constituted of inverters (26a-d figure 3) that operate based on supply of a source power that is adapted to supply a constant voltage without depending on the power source voltage.

14. With respect to claim 12 Nakajima discloses the analog electronic timepiece according to claim 8, wherein the impact detecting unit includes an impact detecting resistor (figures 10(1) through 10(4)) configured to detect a counter electromotive force from the pulse motor (25 figures 10(1) and 10(5)) at the time of the impact, and the load compensation unit includes a load compensating resistor configured to detect a counter electromotive force from the pulse motor soon after the driving pulse is output (there is a lack of antecedent basis for the term load compensation unit. Column 3 lines 1-18, provides a discussion of the operation of the device such that the detection of a counter electromotive force from the pulse motor is performed after the driving pulse. Figures 10(1) through 10(4) teach a plurality of resistors all of which detect forces from the motor.)

15. With respect to claim 13 Nakajima discloses the analog electronic timepiece according to claim 11, wherein the impact detecting resistor has a resistance value set at the minimal resistance value with which the rotation of the pulse motor is detected (the resistors inherently are set of the minimal resistance value with which the rotation of the pulse motor is detected, because the resistance said resistors inherently define said value at which the pulse motor is detected.)

16. With respect to claim 14 Nakajima discloses the analog electronic timepiece according to claim 11, wherein setting of the impact detecting resistor is set for each

type of timepiece (figures 1 and 2 teach two different embodiments. Subsequently the setting for the resistors must be set for at least these two variations.)

With respect to claim 15 Nakajima discloses the analog electronic timepiece according to claim 11, further comprising a detecting resistor (figures 10(1) through 10(4)) used commonly for the impact detecting resistor and the load compensation resistor, wherein the impact detecting unit and the load compensating unit are configured to detect an impact and load compensation using the detecting resistor (column 3 lines 1-18.)

17. With respect to claim 16 Nakajima discloses the analog electronic timepiece according to claim 6, wherein the lock pulse output unit is configured to secure an output term (figure 4) of the lock pulse (T1 and T2 figure 4) when the lock pulse is input at a time of a logic frequency adjustment executed at predetermined intervals ("I" and "II" figure 4; and column 3 lines 1-18)

18. With respect to claim 17 Nakajima discloses the analog electronic timepiece according to claim 6, further comprising a battery detection controlling unit configured to make the output of the lock pulse (t1 and t2 figure 4) precede when the lock pulse is output from the lock pulse output unit at a time of detection of the power source voltage executed at predetermined intervals ("I" and "II" figure 4; and column 3 lines 1-18.)

Claim Rejections - 35 USC § 103

19. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

20. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Nakajima (US 4404510.)

21. With respect to claim 5 Nakajima discloses the analog electronic timepiece according to claim 2.

Nakajima does not explicitly state a chopper-width which is set to 30.5 .mu.s.

Nakajima teaches a crystal oscillator for providing a reference signal (1 figure 1 and 21 figure 2.)

The most common crystal oscillator is a quartz oscillator which has an oscillation frequency of about 32 kHz. An oscillation frequency of about 32kHz would correspond to an oscillation every 30.5 microseconds.

At the time of the invention it would have been obvious to one skilled in the art to use a quartz oscillator as Nakajima's reference oscillator crystal. The reason for doing so would be to use a well-known and easily accessible crystal type to achieve Nakajima's design.

Conclusion

22. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.
23. Kyono (US 4688948) teaches a stepping motor driving circuit and for a timepiece.
24. Hara (US 6194862) teaches a control device for a stepper motor which functions to detect rotation thereof.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sean Kayes whose telephone number is (571) 272-8931. The examiner can normally be reached on 8:00-5:00.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bradley Paula can be reached on (571) 272-2800 ext 33. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2833

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

SK

12/28/2007



RENEE LUEBKE
PRIMARY EXAMINER